FEBRUARY 1947

FIREMEN

FIFTY-FIRST YEAR • NATIONAL FIRE PROTECTION ASSOCIATION

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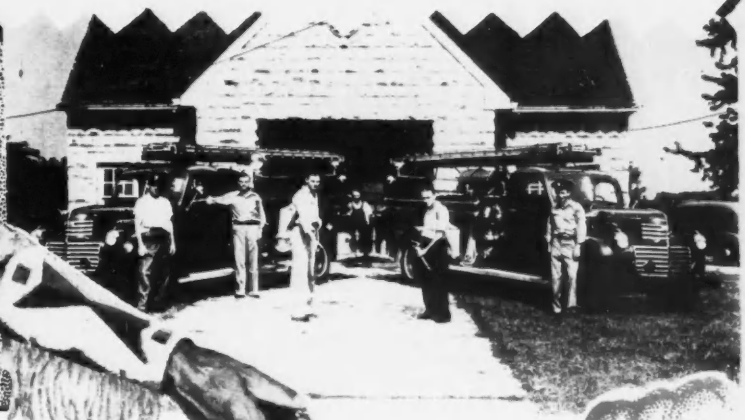

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UNDER COUNCIL-MANAGER GOVERNMENT
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FIRE DEPARTMENT
OLAF SORENSON, CHIEF

October 4th, 1946.

Mr. Pierce J. Fleming, Dist. Mgr.
Mack Manufacturing Corporation
St. Paul, Minnesota.

Dear Mr. Fleming:

I could not feel otherwise than to write you a word of our deep appreciation for the services rendered this department in advising us on our Mack equipment from both Mr. Robt. Van Dusen and your Mr. Kafski. Mr. Van Dusen, who willingly stayed over to be sure that all of our operators had a full knowledge of the pumping and handling of the Mack, is especially to be commended.

We find that advice is always plentiful and cheap, but it usually comes from unreliable sources and to have two crackerjack men from Mack to give us first hand knowledge is a service invaluable to us. A good many things were talked over between the operators, my mechanics and your men and I feel they are on very safe ground in handling our Macks.

Thanks sincerely,

Olaf Sorenson

Olaf Sorenson, Chief

Mack Type 95, 1000-gallon Pumper recently delivered to the City of Superior, Wisconsin.

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FIRE APPARATUS

Firemen

Volume 14 Number 2

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TO jump or to burn! That is the terrible alternative in which the so-called "guests" of fire trap hotels find themselves when awakened to find their room cut off by flames which are sweeping the corridors. "Don't jump, wait for the firemen;" is a cry that has gone up hundreds of times in the past one hundred or more years since organized fire departments have rushed to the scene of impending tragedy with their ladder equipment. In a long record of terrible fires, it has been comparatively seldom once the fire department arrives, that an agonized face has appeared at a window in vain. In most cases the persons who jumped to death or permanent injury would have been saved had they waited a few moments more for rescue.

It is probably impossible for a person choked by smoke and driven to a window sill by flame to use rational judgment, but few persons can hope to escape with their lives when jumping from heights of even three or four stories. Such people do not have time to consider that by jumping they are actually taking their own lives and might be classed as suicides. It has been stated many times that fear is the greatest of killers.

As has been pointed out before in FIREMEN a well trained crew with a life net can save persons jumping from a height of four to five stories, but experienced fire officers hesitate to have a net spread on many occasions because persons beyond the range of the net may believe the net is spread for them and leap in desperation. A good ladder crew can usually do a better rescue job. The casualty record for both firemen and persons jumping is likely to be rather high in the desperate situation when nets must be used.

In the hysteria that has followed the Winecoff Hotel disaster in Atlanta, some persons have been advocating long canvas chutes as a means of escaping from such fires. It does not seem to occur to such persons that the practical use of chutes is limited in general to places within reach of ladders. Also use of the chute may tie up trained fire department ladder men and ladder equipment during critical stages of rescue operations. Chute devices are chiefly of value where a number of persons can be evacuated from a single room or area.

In the Winecoff fire most of the victims were on upper floors beyond the reach of 100 ft. aerial ladders. They were trapped in their individual rooms because the corridors were made impassable by heat and flame. No one has explained how a canvas chute could be raised to each of these upper floor rooms beyond the reach of ladders.

The tragedy could have been averted at much less cost than providing chutes by the simple expedient of installing doors at the stairway so that the initial fire could not have left the third floor. The fire department would have had no trouble in extinguishing the flames on one floor if someone had sent in an alarm with reasonable promptness.

Delayed detection, delayed alarms and unprotected open stair and elevator shafts were responsible for the great hotel fire tragedies in Chicago, Atlanta as well as other lesser disasters.

LOUISVILLE, KY. Another hotel fire tragedy was nipped in the bud on December 22 through a prompt alarm and building evacuation when fire occurred on the ninth floor of the 18-story Kentucky Hotel. On-the-toes operation by the alert Louisville Fire Department in saving a woman trapped on the ninth floor just above the top of the 100-foot aerial ladder (see cover) and split second operation of hose crews in hoisting lines to the eighth, ninth, and tenth floors boxed in the fire just as it started rolling down the open corridor toward stair shafts after gutting two ninth floor rooms. A hose crew with gas masks knocked down the fire on the ninth floor in 10 minutes, after an assistant hotel manager had been driven back and overcome while trying to make the fire with standpipe hose. The January *Quarterly* of the NFPA carries a full account of this exciting fire, nipped by intelligent action just as disaster threatened.

Cover Photo by Press Association

What a Fireman Should and Shouldn't Know about Insurance Rates and Underwriters' Grading

By Chief J. W. Just

Author's Note by the Author—"Total experience in fire fighting, fire prevention, and fire protection fields, 35 years, which included service with the Michigan Inspection Bureau, the Western Actuarial Bureau, Flour Mill Mutual Insurance Corporation, and as a paid fire department chief.

"For the past 8 years, director of firemen's training at the University of Maryland. Prior to that, director of the Fire Service Division of the Wisconsin Schools for Vocational and Adult Education.

"As for the rest, I'm grey-haired, lazy, and have absolutely no bad habits — conceding that your definition of 'bad habits' might differ from mine, mine aren't bad, I like 'em!"

WE BELIEVE that the fireman should know just enough about fire insurance rating and the preliminary town grading to assure three things:

(*a*) That he can help in organizing, equipping and training the kind of fire department that will meet the Underwriters' requirements and thus contribute its proper share to a good town classification. If this is done, it will definitely be a good department.

(*b*) That the department, through its chief officers, can, upon occasion, properly advise city officials in matters affecting the grading of the city, and

(*c*) That he will know enough about the complexity and engineering skill involved in making fire insurance rates to prevent him from ever sticking his neck out.

Contrary to the opinion of many firemen, the fire department is far from being the chief factor in the grading of a city or in the determination of fire insurance rates. It is only one of many items that are considered. Let us look at the matter of town grading first, as that is the first step in the establishment of fire insurance rates.

There are ten classifications of towns and the classification determines the basic rate for that community. In grading, the poorest classification is a tenth class town; that is, a rural village with no fire protection whatsoever. This town is considered as representing 5,000 to 4,500 deficiency points. As conditions are improved, deficiency points are removed until there are only 500 or less deficiency points in a city grading first class. Offhand, we do not know of a first class city.

The town classifications are:

1st class	0 to 500 points of deficiency
2nd class	501 to 1000 points of deficiency
3rd class	1001 to 1500 points of deficiency
4th class	1501 to 2000 points of deficiency
5th class	2001 to 2500 points of deficiency
6th class	2501 to 3000 points of deficiency
7th class	3001 to 3500 points of deficiency
8th class	3501 to 4000 points of deficiency
9th class	4001 to 4500 points of deficiency
10th class	4501 to 5000 points of deficiency

These deficiency points are apportioned between seven factors that enter into the fire safety of the town.

They are:

Water supply	1700 points
Fire department	1500 points
Fire alarm	550 points
Police	50 points
Building laws	200 points
Hazards	300 points
Structural conditions	700 points

Let's just briefly look at the features given consideration under the seven items graded, taking water supply first:

1. Appointment of employees
2. Efficiency of executive
3. Records and plans
4. Emergency repair provisions
5. Receipt of alarms by department
6. Normal adequacy of entire systems
7. Reliability of source of supply
8. Sufficiency of reserve pump capacity
9. Sufficiency of reserve boiler capacity
10. Condition and arrangement of equipment
11. Fuel supply or electric power
12. Construction of pumping station
13. Fire protection of pumping station
14. Hazards of pumping station
15. Exposures to pumping station
16. Reliability of supply mains as affecting adequacy
17. Reliability of installation of supply mains
18. Completeness of arterial system
19. Reliability of installation of mains
20. Effect of small mains in high value district
21. Four-inch mains in system
22. Dead ends, 4-inch and 6-inch mains
23. Completeness of gridiron of 6-inch mains
24. Quality and condition of pipe
25. Conditions affecting fire protection in other than section graded
26. Spacing of gate valves
27. Condition of gate valves
28. Distribution of hydrants in high value district
29. Distribution of hydrants in residential district
30. Condition of hydrants
31. Size and design of hydrants
32. Valves on hydrant branch

It will be seen from the above list that the fire department has very little to do with the elimination of deficiency points in the water supply, except perhaps in the matter of proper vigilance and timely suggestions.

Now let us see just what items are of interest to the Underwriters' in the fire department itself:

1. Number of officers
2. Number of operators
3. Qualifications of chief officers
4. Tenure of office of chief
5. Appointment and tenure of office of officers
6. Enlistment requirements
7. Retirement requirements
8. Number of hose or engine companies (apparatus)
9. Number of ladder companies (apparatus)
10. Distribution of companies
11. Total required manual strength of department
12. Manual strength of existing companies on high value district
13. Engine capacity
14. Reserve engines
15. Condition of engines and hose trucks
16. Fireboats
17. Powerful stream appliances
18. Small stream appliances
19. Reserve hose trucks
20. Amount of hose
21. Hose larger than 2½-inch
22. Condition of hose
23. Minor equipment
24. Fuel
25. Repair facilities

26. Motive power
27. Suitability of fire stations
28. Discipline
29. Drills and training
30. Response to alarms
31. Fire methods
32. Conditions affecting fire department operations
33. Building inspections
34. Records of fires, etc.

There are two or three of the above items upon which we should comment briefly. For instance, items 3, 4, and 5:

It would be clear to any modern thinking fireman, as well as it is to the Underwriters, that much of the efficiency of a fire department depends upon the quality of its officers.

Whether or not the chief is selected upon a basis of qualification for the job — or got the job purely because of seniority or politics. The same holds true of the other fire ground officers. Also, whether or not the department selects a qualified officer staff and then permits them to grow in their jobs, or changes officers every year or so, as so many volunteer departments do.

Items 6 and 7. (Enlistment requirements and retirement requirements). It is also clearly evident that a good department should have reasonably rigid entrance requirements in order to get well qualified men and also have proper retirement arrangements that will serve to prevent an eventual overload of over-age men.

Item 28. (Regulations and discipline). "Provision shall be made in complete printed regulations for control of the department and authority given the chief to enforce them, subject to review or confirmation by the supervising body or the Civil Service Commission. Discipline shall be rigidly maintained and fines and suspensions impartially imposed and maintained."

If adhered to, this arrangement would serve to eliminate political or other control of the department, neither would it permit the chief's being a mere figurehead and the department being run by a secretary or some other unqualified individual. It would also insure that no favoritism is shown to any man or group of men. It is evident that the Underwriters believe this would increase the efficiency of the department on the fire ground.

Item 29. (Drills and training). It would probably still be well to quote directly from the grading schedule on this subject of drills and training.

"Drills in charge of a competent officer shall be regularly held at a drill tower for all company members of the department. They shall be supplemented by frequent drills and instruction at fire stations. An officers' school or conference shall be regularly held. Drills shall be classed as not better than 30 percent deficient if only for newly enlisted men, or if no drill tower is provided."

Item 31. (Fire methods). Again, we think it advisable to quote the schedule:

"These shall be modern and include the liberal use of small streams, shut-off nozzles and salvage appliances to reduce water damage, the use of appliances for powerful streams on serious fires, suitable ladder work and ventilation and the general policy of attaching lines to siamese connections serving sprinklers and standpipes. Lack of proper equipment and manpower to be considered in determining deficiency in fire methods."

Under Item 32 (Conditions affecting fire department operations) are considered such points as:

(a) Condition of paving and streets generally
(b) Railroad crossings, draw bridges, etc.
(c) Steep grades
(d) Deep gutters, bad crosswalks and other features that tend to slow response
(e) Overhead wire obstructions
(f) Width of streets, alleys, etc.

A careful analysis of the above items will indicate that there is very little among the fire department items that the department itself cannot do something about if it is so inclined.

Under Fire Alarm, there are twenty-four items given consideration, but we will not list them here. However, Fire Alarm represents 550 points or 11 percent of the total town grading.

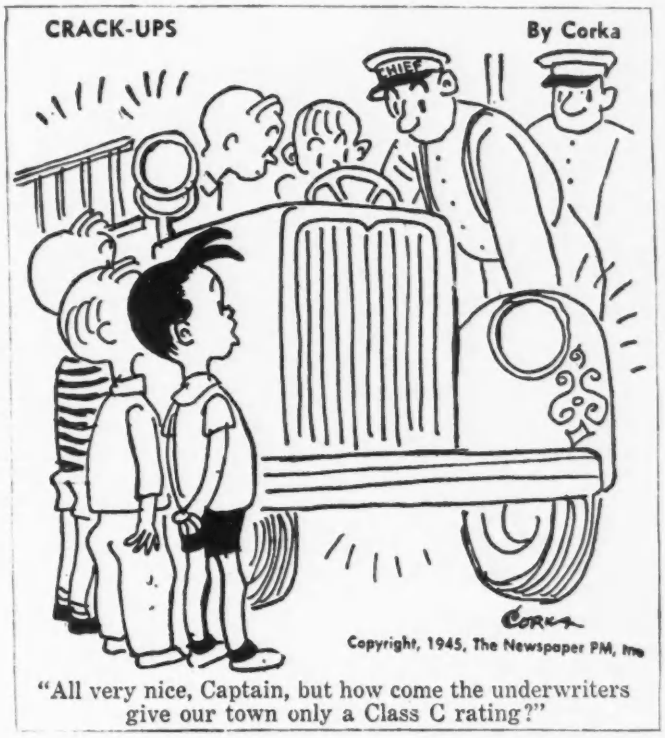
Building Laws:

1. Fire limits
2. Construction and protection of buildings
3. Wooden shingle roofs
4. Records

NOTE. Lack of enforcement is considered equivalent to absence of law.

Under structural conditions, the following items are considered:

1. Area of district or largest subdivision made by fire breaks or barriers
2. Street widths



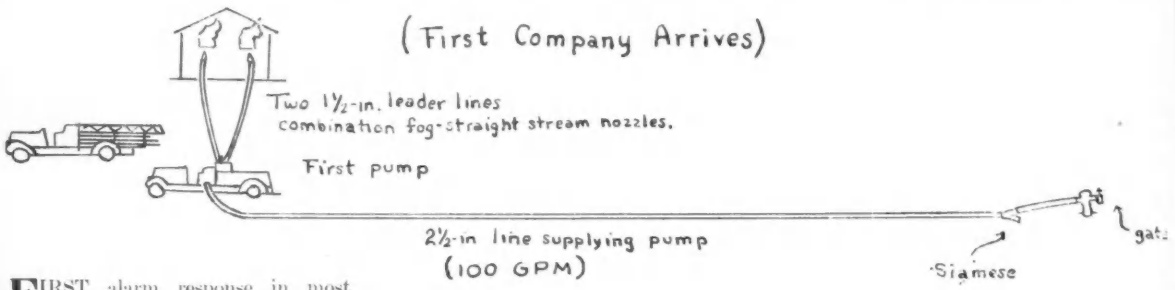
"All very nice, Captain, but how come the underwriters give our town only a Class C rating?"

3. Accessibility of block interior
4. Percent of area in streets and open spaces
5. Percent of block area built upon
6. Heights of buildings other than "fireproof"
7. Large and excessive areas other than frame
8. Deficient party and fire walls
9. Unprotected floor openings
10. Unprotected exposed openings
11. Frame buildings
12. Permanent awnings and non-fire-resistive roof coverings
13. Conflagration breeding blocks
14. Exposure to district

The above should indicate that a pretty thorough examination of a town is made during the application of the grading schedule.

Continued on page 18

Layouts for a Two-Company Response



FIRST alarm response in most built-up residential districts consists of two pumpers and a ladder truck with perhaps an average of four or five men on each piece. The following evolution is offered as one method of getting two 1½-inch leader lines in service quickly from the first arriving company, using the second due engine for back-up lines. There are many variations of this layout, and fire companies may want to experiment at their practice drills to see just what method best fits their own situation.

The first pumper arrives with four men. The fire appears to be beyond booster line stage and one man drops off at the hydrant with the butt of the line, hydrant wrench, and gate valve. As the apparatus is laying a line to the front of the building, he connects to the hydrant and gates a second outlet for use by the next pumper.

As soon as the first pumper stops at the fire, the driver reaches into the hose body, breaks the line, attaches it to the pumper intake and calls for water. Two 1½-inch lines carried already connected to a 1½-inch wye attached to one of the 2½-inch pumper outlets are advanced to the fire by the other two men. These lines carry combination fog-straight stream nozzles. In a moment the hydrant man is at the fire assisting with the lines while the operator charges the 1½-inch lines when water is called for. The ladder company performs its usual functions on arrival.

If the first pumper has a booster tank, this can be used to supply the 1½-inch lines while waiting for water, although in most cases water from the hydrant will be available by the time the 1½-inch lines are in position and ready for use.

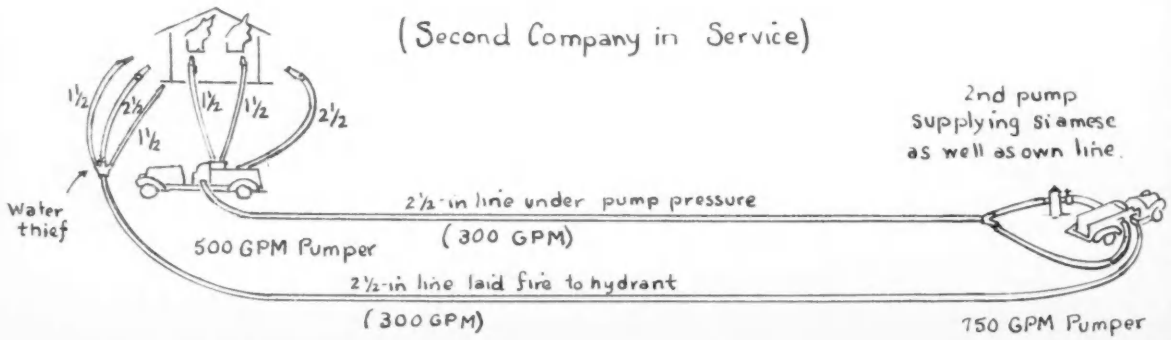
When the second pumper arrives, it makes a fire-to-hydrant layout. If additional 1½-inch and 2½-inch lines are wanted, a water thief with leader lines will be dropped off at the fire before the pump goes to the hydrant to connect up. Or several members of the crew of the second pumper may run a 2½-inch line from the first pumper while their own pumper is hooking up.

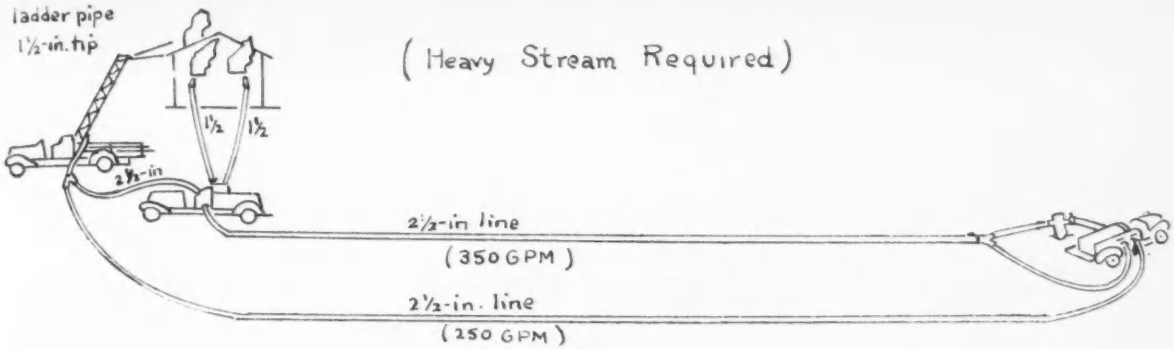
The second pumper connects to the gated outlet of the hydrant. Then 50 feet of 2½-inch hose is run from one pump outlet to the siamese connection carried in the first hydrant line about 20 feet from the hydrant. The second pumper supplies pump pressure to the line feeding the first pump. This line can supply two 1½-inch lines with ½-inch tips plus a 2½-inch line with a 1-inch or 1⅛-inch tip from any reasonably good hydrant.

The operation of the second pumper will be facilitated if the crew is practiced in the use of double couplings to reverse the line for the fire to hydrant layout. Some departments carry a double female coupling on one pumper outlet and have a double male coupling attached to one playpipe in order to speed up reverse lays when desired.

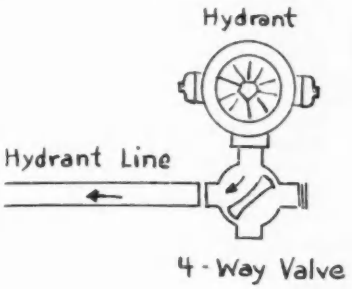
Where it is obvious that three lines (two 1½-inch and one 2½-inch) can handle all the fire, the second engine will not be required to lay hose but will merely drop off men to assist at the fire and will make the pumper hook-up. When the fire is under control, the second engine merely disconnects and goes back to quarters, leaving the hydrant line supplying the first pumper.

If, after the first pumper had laid out, it was decided that a heavy siamesed stream was wanted, a 2½-inch line from each pumper could be used to supply such a stream. If more than 350 gallons are to be carried through the line supplying the pumper in front of the fire, it would be necessary to use 3-inch hose or to run a second line to this pump unless the first line was unusually short and the hydrant pressure exceptionally good.

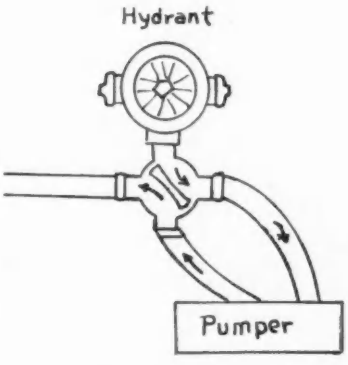




SOME fire departments use a special 4-way gate valve at the hydrant. This combines the work of the hydrant gate and siamese as described in this evolution. The 4-way gate is connected to a hydrant outlet and a hydrant line attached.



When the pumper comes to the hydrant, it connects to another outlet of the gate and runs a section of hose back to an intake on the gate to place the original hydrant line under pumper pressure.



Such connections are more costly, however, and the evolution illustrated can be carried out with standard engine company equipment.

TO facilitate the type of hydrant layout made by the first arriving pumper company, a number of fire departments have gated rear intakes for 2½-inch hose on all pumpers and also have two gated outlets for 1½-inch hose at the rear of the apparatus. The two 1½-inch leader lines with nozzles attached are carried connected to these outlets, ready for instant use the minute the hydrant line is connected to the rear of the pumper. Some departments clamp the hydrant line at the rear of the truck as soon as the apparatus stops at the fire, but it would seem that, with a rear 2½-inch intake, the connection could be made direct to the apparatus just about as fast as the clamp could be applied.

One advantage claimed for this type of layout is that the pump operator located close to the burning building can give the desired pressure on each line, eliminating much of the guesswork as well as the delay involved if the first pumper had to go back to the hydrant.

"Ice the Gutters!"

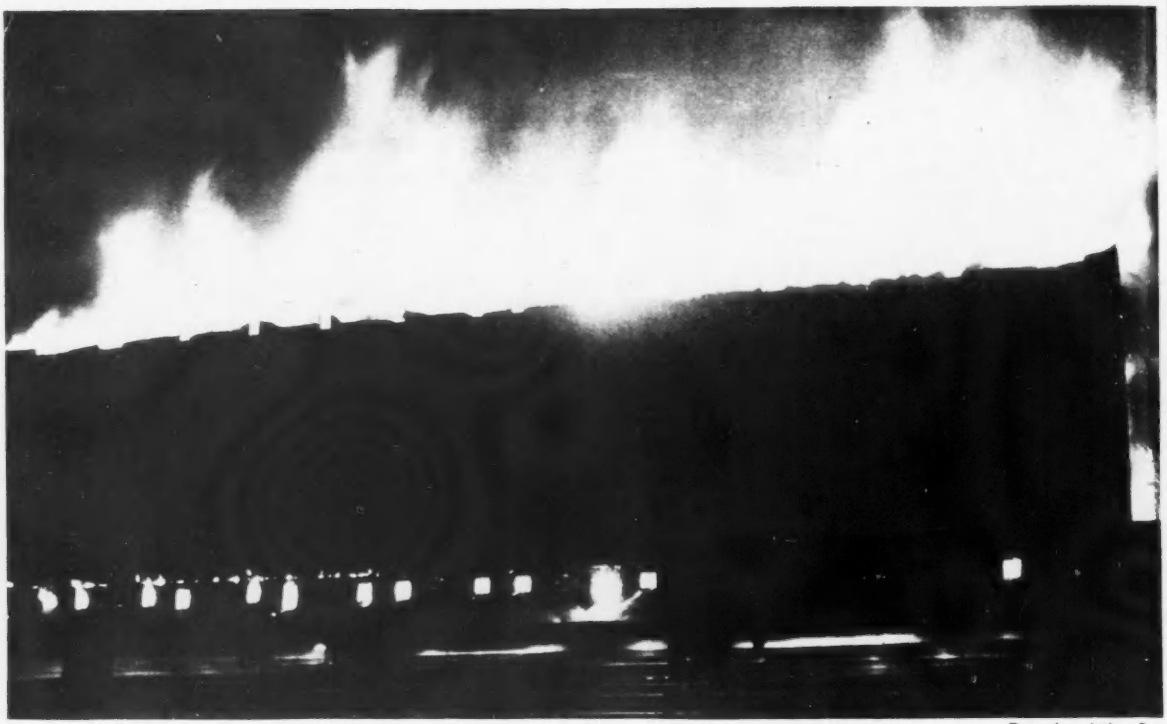
ALMOST all fire fighters are aware of the danger of old dry wooden shingle roofs but how many appreciate the part played by gutters in spreading fires? Many houses having fire-retardant roofing have wooden gutters. These are baked by summer suns and dried by winter winds. Often they are filled with a surprising amount of dried leaves and other debris including pine needles if there are pine trees in the vicinity.

A brisk breeze carries flaming embers from an exposure fire for perhaps a quarter to half a mile. These roll down the roofing into the gutter where fire quickly springs up. It may not appear serious at first, particularly where the outer roofing is fire-retardant. The fire department busy at the original fire may not realize that flames are spreading through concealed spaces under the roofing and into sidewalls and partitions. This makes one of the meanest fires to ferret out and can run into substantial loss.

In cold northern climates the fire fighter has an ally that helps him prevent such exposure losses. "Ice the gutters" is one of the first cries of the chief as a hose crew wets down all gutters within reach of the embers. This is much more effective and certain than patrolling with booster lines. Experience has shown that during windy weather the flying brand often does its job before the booster line can give adequate protection.

ICING exposed wood shingle and clapboard siding also gives extremely effective protection to nearby exposures. It takes a lot of heat to melt the ice and raise the temperature of the wood to its ignition point. Where there is a major exposure threat over a considerable area, a water tank truck supplying 1⅛ to 1½-inch lines can quickly fill the gutters and patrol a large area. It is not a bad idea to carry a supply of tapered round wooden plugs which can be used to quickly block the downspout openings where they can be reached quickly with a short ladder. Civilian volunteers can often be pressed into service for such jobs.

Where temperatures are below freezing, a film of water spray makes a good protective blanket for combustible portions of exposed buildings. Some rural departments report excellent results with 1½-inch fog lines to place a shield of ice on exposed property. A quick application of fog may give protection for some minutes and can be renewed as needed under severe conditions.



Press Association, Inc.

Two Multi-Million-Dollar Grain Elevator Fires in Minneapolis

INADEQUACY of water supplies for private and public fire protection of this (above) frame, metal-clad terminal elevator of the Froedtert Grain and Malting Company was a major factor contributing to its destruction by fire on December 19.

Located in a congested railroad yard not easily accessible to fire fighters, the large elevator was protected by an inadequate dry pipe sprinkler system (obsolete pipe schedule and poor distribution of sprinklers) supplied from a 4,500-gallon pressure tank and an automatic 750-gallon fire pump acting as a booster for the low pressure (65 pounds) 6-inch dead-end city main (maximum water: 500 gpm at 0 pounds pressure).

It is believed that friction between the pulley and belt caused the fire that was discovered by an employee at 12:12 A.M. The alarm was sent from a private fire alarm box followed by the three additional alarms transmitted by fire officials during the next half hour. The inadequate amount of sprinkler water, further depleted when electric power failure stopped the fire pump at 12:28 A.M., was no match for the flames that spread rapidly through the 80-foot high elevator. The fire was also beyond the control of the fire fighters who directed their efforts toward saving exposures. As soon as freight cars were pulled out of danger, long lines were laid, some taking water from hydrants a mile from the fire. Serious exposure damage was confined to the adjacent power plant and grain drier building. Destroyed with the elevator were more than 1,000,000 bushels of grain.

The total loss in this fire amounted to $2,500,000.

ON December 28, 1946, the one-block-square timber and metal-clad unsprinklered terminal elevator (below) of the Brooks Elevator Corporation, filled to capacity with 1,000,000 bushels of rye, corn, and barley, was destroyed by fire caused by friction between a pulley and belt. A strong draft carried flames upward through the structure after a dust explosion early in the fire blew off the roof. The loss figure has been estimated at $1,840,000.

"There Ought to be a Law"

By Horatio L. Bond, Chief Engineer, NFPA

LET'S assume that you have a building in your community which you think ought to be fixed up so as not to be a bad fire hazard. Perhaps you think it ought to be protected with automatic sprinklers.

You probably have the idea that it would be a good thing if you had a law which allowed the fire department to order sprinklers to be installed in dangerous buildings. But with a law, you may really be not much better off.

If you have a law which says, for example, that you may order sprinklers to be installed in 3-story combustible buildings occupied as hotels or apartments, the courts would be inclined to interpret such a law rather narrowly, if it came to an issue between the fire department and the property owner. The court would be likely to say that you could not make a similar recommendation applying to dormitories or some occupancies not named, and the lawyers would squabble over the definition of combustible and other details.

The fire department really is in a very strong position when it goes to court. Its position is strongest if it does not rely on any law which may be narrowly interpreted, but simply takes the issue into court on the broad basis that the fire department is established to protect the public interest. This is known as involving the police power, which is a matter of common law and does not require a specific law such as a statute law or ordinance.

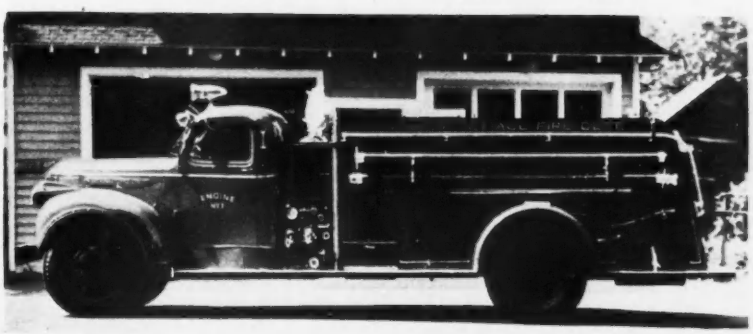
Here is the sort of procedure involved: The first step is to set down on paper, with diagrams and photographs if necessary, just what the facts are. The statement should show what the fire possibilities are in the building in question and explain clearly how they are a threat to loss of life or danger to the public by fire. The statement should be accompanied by exhibits where possible, such as pictures and extracts from reports which show how fire and loss of life has occurred under similar conditions. The fire department's official judgment in the matter, based on experience, should be expressed and would be considered as evidence.

A second step is to make a list of the things to be done to correct the conditions. The list should be in such form that an owner or manager can take the list to an architect, sprinkler contractor, or a builder, and the architect, the contractor, or the builder will understand exactly what he is to do. Blueprints of drawings are useful because they suggest to the owner that he get the necessary physical changes made. In any case, the statement should be so worded that when the owner sees it his first inclination will not be to pass it to his lawyer.

Of course the first thing to do will be to present this survey and statement in a letter to the property owner

Continued on page 15

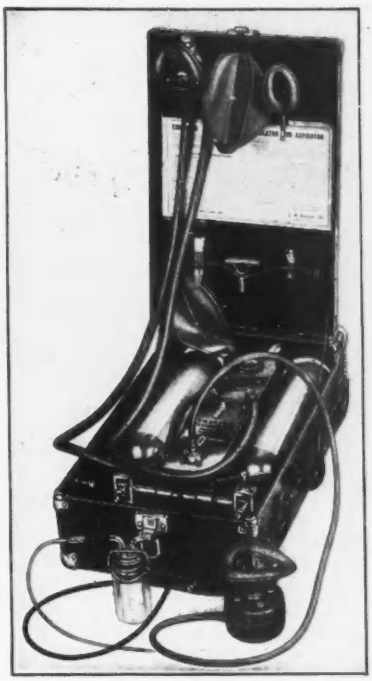
VALLEY COTTAGE, N. Y., TANK TRUCK



Valley Cottage Engine Company No. 1 recently obtained a new 1000-gallon tank truck on a GMC chassis, having five speeds forward. The truck carries two 150-foot booster reels, one on either side at the rear, and also carries 550 feet of 2½-inch hose.

There is a 200 gpm pump for which four lengths of 2½-inch suction hose are provided. The truck has a portable generator with three floodlights and 150 feet of extension cord for each. There are four equipment lockers on the truck body and the usual ladders and appliances. The cost of the apparatus was $6500. The company serves an area lacking a public water system.

When Seconds Count In Saving Human Life be sure you have an



EMERSON RESUSCITATOR

Leading fire departments throughout the country have from actual experience with serious cases given the Emerson resuscitator, inhalator, and aspirator the reputation of being America's finest lifesaving instrument.

Your men and community are entitled to this protection. Write for literature or a demonstration.

J. H. EMERSON CO.
24 Cottage Park Ave.,
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MAKING A GOOD JOB OF IT

BY WARREN Y. KIMBALL

Nozzle Tips for Heavy Streams

IN a recent issue of FIREMEN we discussed the various nozzle tips for hand lines, indicating the flows that each size tip produces at an effective pressure. Big fires require heavy streams and to produce such streams so-called heavy stream devices such as monitor nozzles, deluge sets, wagon pipes, turret nozzles, ladder pipes and other appliances are used to combine two or more lines to supply a large nozzle.

Many departments fail to develop heavy streams promptly when needed, largely because they are not drilled in evolutions designed to place heavy streams in service with maximum speed and because they are not familiar with the job that each large nozzle tip size is designed to do. Attempts to supply a 2-inch tip with a layout that calls for a 1½-inch tip will result in failure and possible breakdown of pumpers.

The work of providing effective heavy streams for large fires is little more difficult than that of providing hand lines, and only heavy streams have the range and cooling effect necessary to secure extinguishment of large fires. A heavy stream device capable of taking the full capacity of the pumper should be considered an essential part of pumper company equipment. A heavy stream device left in the basement of the fire station will do no good during the critical stages of a fire, yet all too many fire departments have to send back to quarters for heavy stream equipment.

In general, when we speak of heavy streams we are talking of streams discharging with a nozzle pressure in the range of 80 psi. The desired pressure may vary from as low as 70 pounds and as high as 90 pounds and still have approximately the same relative discharge from the tip. On some occasions nozzle pressures as low as 60 pounds may be acceptable for heavy streams. In other situations where great reach of stream is desired nozzle pressures may reach 150 or 200 pounds, requiring different layouts.

There is one easy way to classify and remember the heavy stream tips. They can be listed in accordance with the nearest 100 gpm discharge at 80 pounds as follows:

Tip Diameter in Inches	GPM
1¼	400
1⅜	500
1½	600
1⅝	700
1¾	800
2	1100

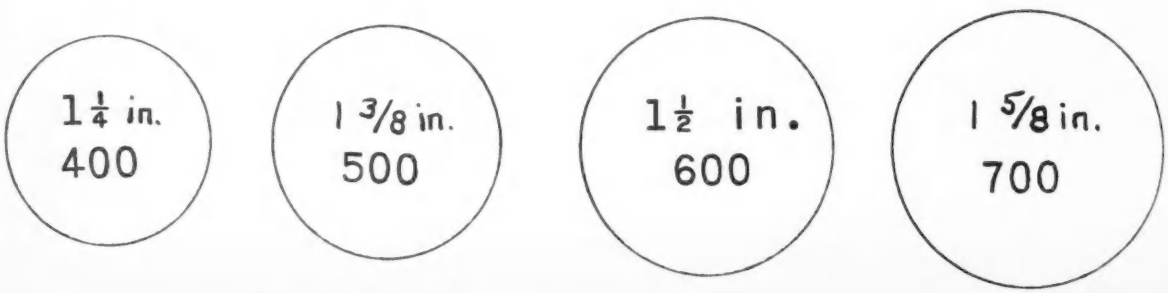
Perhaps some men will want to remember the exact figures of 813 gallons for the 1¾-inch tip and 1,063 gallons for the 2-inch tips.

THE first nozzle tip we have listed for heavy streams is the familiar 1¼-inch tip that we previously encountered with our large shut-off nozzle for hand lines. (Actually 413 gpm at 80 pounds.) While to some this may appear rather small for a heavy stream, it has much to commend it for practical operations. It is a particularly valuable tip on the smaller sizes of aerial ladder pipes, having waterways which can handle only 400 to 500 gallons without excessive pressure losses. Two lines, each carrying only 200 gallons (10 pounds friction per 100 feet, 2½-inch hose) can supply this tip. Thus a 750 gpm pumper operating at high pressure because of long lines can supply the 1¼-inch tip for almost all practical fire ground distances. It will be recalled that the 750 pumper is rated to discharge 375 gpm at 200 pounds. The 500 gpm pumper can supply the 1¼-inch tip through two lines of hose up to distances of 300 to 400 feet or more, depending upon the type of pump and hydrant pressure available.

THE 1⅜-inch nozzle tip is one of the most useful heavy stream tips because it delivers exactly 500 gpm at 80 pounds. Thus this tip will take the full capacity of the 500-gallon pumper through two lines of 2½-inch hose (15 pounds friction per 100 feet). For good results, the 500-gallon pumper ordinarily should be within 250 feet of the nozzle. Distances up to 500 feet can be supplied by a 500-gallon pumper operating at 120 pounds if three lines are used to reduce the friction loss to 7 pounds per 100 feet.

The 1⅜-inch nozzle tip is also an easy tip to supply with a single 1000-gallon pumper, or a 750-gallon high pressure pumper, operating at high pressures. These pumpers will give 500 gpm at 200 pounds pump pressure. This will permit use of ground turrets up to 700 feet from the pump or a ladder pipe nozzle 500 to 600 feet distant. When using the ladder pipe, it must be remembered that in addition to heavy pressure losses in the restricted waterways of the ladder pipe assembly (usually smaller than those of ground turrets), there is considerable pressure loss in passing a large volume of water through the 3-inch hose leading up the ladder from the siamese.

Where the 750- and 1,000-gallon pumpers are within 250 feet of the fire, it is possible to supply the 1⅜-inch tip with two lines and supply a 1-inch or 1⅛-inch hand line tip from the same pumper operated at capacity. It may also be interesting to know that where 3-inch hose is available, a single 3-inch line can supply the 500 gpm flow with 21 pounds pressure loss per 100 feet.



THE 1½-inch tip is perhaps the favorite heavy stream tip. The 600 gallons (596 gpm at 80 pounds, to be exact) does a nice job of blacking out a fire. This stream has a reach of 120 feet when directed to a heighth of 30 feet above the nozzle. This stream may be supplied through two 2½-inch lines with a pressure loss of 21 pounds per 100 feet, or through three 2½-inch lines with the pressure loss reduced to only 10 pounds per 100 feet. It is an excellent tip to use on a large ladder pipe assembly. On most ladder pipes, tips larger than this will cause excessive pressure losses in the waterways. The 600-gallon flow causes 15 pounds pressure loss in the 3-inch line up the ladder.

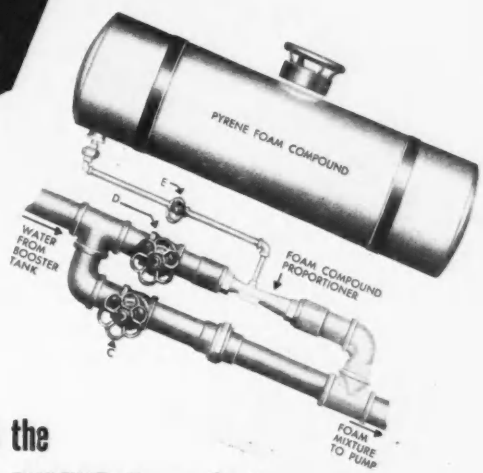
The 1⅝-inch tip puts out 700 gallons at 80 pounds, or 743 gallons at 90 pounds. It is a good tip to supply with three lines from a 750 gpm pumper on the fire ground. Except with very short lines, it cannot be supplied efficiently with two 2½-inch lines due to the high friction loss with the larger flow. With three 2½-inch lines, the friction loss is kept down to 13 pounds per 100 feet.

The 1¾-inch tip provides another powerful stream that may be supplied through three short lines from a 750- or 1000-gallon pumper. Best results will be obtained by using a modern centrifugal pump operating from a strong hydrant. The exact flow from this tip is 813 gpm at 80 pounds. The friction loss with three lines is 17.5 per 100 feet, 2½-inch hose. This is often an excellent tip to use with a water tower outside of a high pressure fire main district, because one good pumper connecting three short lines to the tower can thus place the tower in service. Even at 70 pounds nozzle pressure this tip will discharge 761 gallons, taking the full capacity of the 750 gpm pumper.

The 2-inch tip is the largest size commonly found on heavy stream devices other than fireboats, a few water tower trucks, and other special equipment where larger tips may be provided. Much of the failure in attempts to use heavy streams outside large cities having special high pressure fire mains or unlimited pumper and water capacity has been due to improper use of 2-inch nozzle tips. This tip requires 1,063 gallons at 80 pounds, or 994 gallons at 70 pounds. This means that the full output of a

Continued on Page 20

Now MORE FOAM ... Faster ... Easier



With the New PYRENE* Foam System For Motor Pumpers

You can now increase the fire-fighting capacity and efficiency of any booster truck with a Pyrene Air Foam System—and at reasonable cost. Consider these outstanding features:

LARGE FOAM PRODUCTION — Every 100 gallons of water and five gallons of Pyrene Foam Compound produce 1,750 gallons of foam at the rate of 700 gallons per minute.

INCREASED CAPACITY—When beyond the range of hydrants, you can make your water supply go farther—for example, 100 gallons expand to 1,750 gallons of foam.

SPACE ECONOMY—A compact 25-gallon tank of foam compound produces more than 8,000 gallons of foam. Ample capacity for 500 gallon water tank or reserve capacity for smaller tank.

SELF-CONTAINED—Not dependent upon hydrants or suction.

EASY, SPEEDY TO OPERATE — With pump running, simply turn valves; foam compound feeds automatically at proper rate.

FOAM OR WATER — To discharge foam, close valve C, open valves D and E; to discharge water, close D and E, open C.

CONTINUOUS OPERATION — As long as water and compound may be replenished.

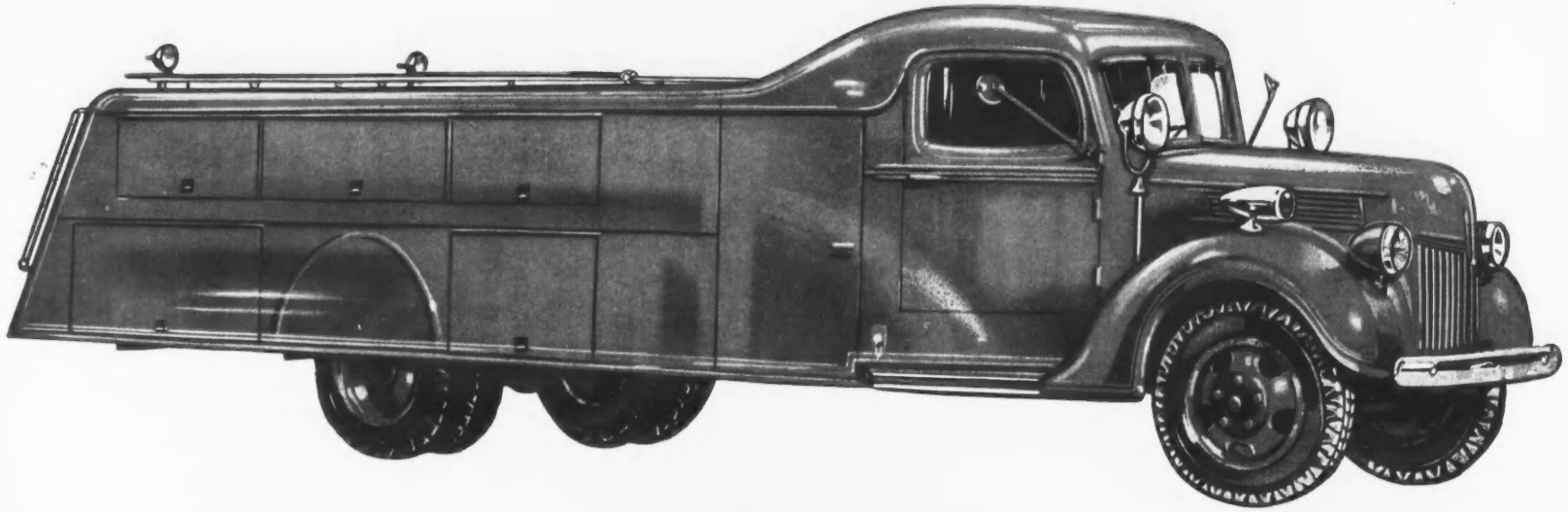
LOW COST — Simplified equipment, easily installed.

Pyrene Air Foam is ideal protection for flammable liquid hazards, and when water is scarce, for fires in ordinary combustibles. It is free-flowing, fast-covering, quick-extinguishing. It blankets horizontal and vertical surfaces. Ask your Pyrene fire department jobber or write us for information.

*T. M. Reg. U. S. Pat. Off.

Pyrene Manufacturing Company
NEWARK 8 • NEW JERSEY
Affiliated with C-O-Two Fire Equipment Company

DARLEY CHAMPION 145 — TYPE S500 PUMP

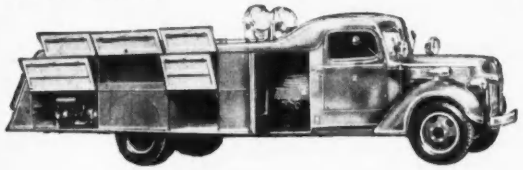


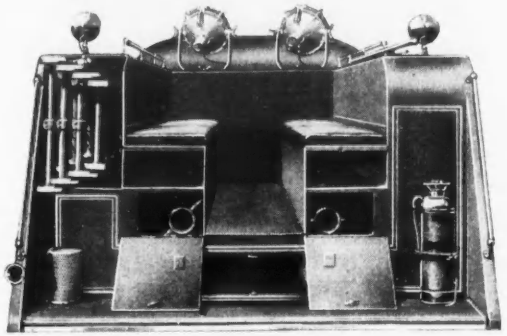
COMPLETE FLOODLIGHT EQUIPMENT

A compartment is provided in the right side of the body at the rear to carry the portable electric plant. The two floodlights can be carried on a special mounting platform in back of the cab or in a compartment.

ALL EQUIPMENT FULLY ENCLOSED

This body is designed and constructed with ten compartments, all extra large, so that everything can be carried safe against the weather, dust and loss or damage. Body width 91 inches. Can be built on any chassis with wheelbase up to 200 inches.



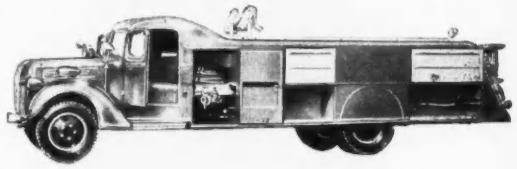


SEATING CAPACITY FOR 8 MEN

Ample room for 4 men on each side with generous aisle space for speedy entry and exit. The seats lift up so that the compartments below can be loaded with fire hose. Suction hose, 4 lengths if desired, carried in compartments where it is instantly accessible. Extension ladders and roof ladders carried in completely protected compartment in left side of body.

3 MAN CAB

Special custom cab, extra wide to carry three men. Streamlined with the body; rugged allsteel construction. Spring cushioned seat and back rest. Removable cushions, covered with fabricated weatherproof material, far more durable than leather. Pump controls totally enclosed yet instantly accessible thru full length door directly in back of cab. Booster hose carried in bed or on reels directly above pump—both lines always live and either one or both can be pulled out for quick booster streams.

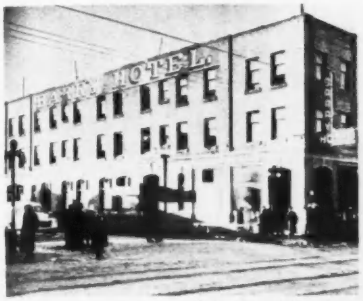


Write for NEW Fire Apparatus Booklet

W. S. DARLEY & CO.

ESTABLISHED 1908 — CHICAGO 12, ILL.

Eleven Lives Lost in Canadian Hotel Fire



Press Association, Inc.

THE DAY after the tragic Winecoff Hotel fire in Atlanta, on December 8, 1946, 11 persons died in a fire that gutted the 36-year-old semi-fire-resistive Barry Hotel in Saskatoon, Sask.

The fire started in a cafe on the ground floor of the hotel where an employee was filling a gasoline can for the stove. The gasoline ignited and a waiter tried to carry the can to the hotel entrance. He dropped it and tried to kick the can, still flaming, through the hotel doors. Instead, the gasoline splashed over the walls and floor and involved combustible partitions and the rotunda. Firemen attempted to cut off the upward spread of fire with nine heavy streams but flames shot upward through the open rotunda and open stairways.

"There Ought to be a Law"

Continued from page 11

and invite its study and answer any questions.

In many cases, you would only have to go to court when the owner, point-blank, refuses to do the needful, but then you have the necessary evidence on which to act. You address a petition to the proper court, declaring that in the absence of automatic sprinklers or other protective measures an unreasonable fire hazard exists which is a threat to life and public safety and that the building should be adjudged a public nuisance, to be removed or closed unless the measures specifically outlined are carried out.

If this course is followed, you would often find that you would get the sprinklers in that building or the other corrective measures taken care of.

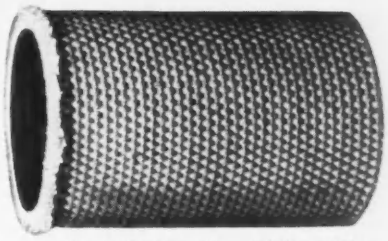
Don't forget that both property owners and the courts will feel that you are merely carrying out the fundamental purposes for which they have a fire department.

GOODALL FIRE HOSE

COTTON RUBBER-LINED — SINGLE OR DOUBLE JACKET

Absolute reliability and safety in fire hose are **doubly** appreciated when there's a tough blaze to fight through the hazards and discomfort of freezing temperatures. That's why GOODALL is approved by so many men and companies who have had opportunity to test both the single jacket and double jacket under all conditions.

Rugged construction, complete flexibility and comparative lightness of weight, are among the features assuring long, safe service from every length. Furnished with or without Underwriters' Label.



Single Jacket, Sizes 1½" to 2½"
Double Jacket, Sizes 1½" to 3"

OTHER GOODALL FIRE-FIGHTING PRODUCTS include Chemical Engine or Booster Hose; Fire Engine Suction Hose; Underwriters' Unlined Linen Hose; Firemen's Coats and Boots. **Contact our nearest branch for details and prices.**

GOODALL RUBBER COMPANY, Inc.

THE GOODALL-WHITEHEAD COMPANIES

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W. S. DARLEY & CO. CHICAGO 12, ILL. ESTABLISHED 1908 Write for NEW Fire Apparatus Booklet

City or County Reno Does NOT Gamble on Fire

by Robert M. Hunter, Fire Prevention Bureau Reno, Nev., Fire Department

The Washoe County pumper, housed in Reno's Central Station, drafts water from a ditch outside the city. The county engine company is under the jurisdiction of the Reno Fire Department. County firemen also attend the Reno Fire College.

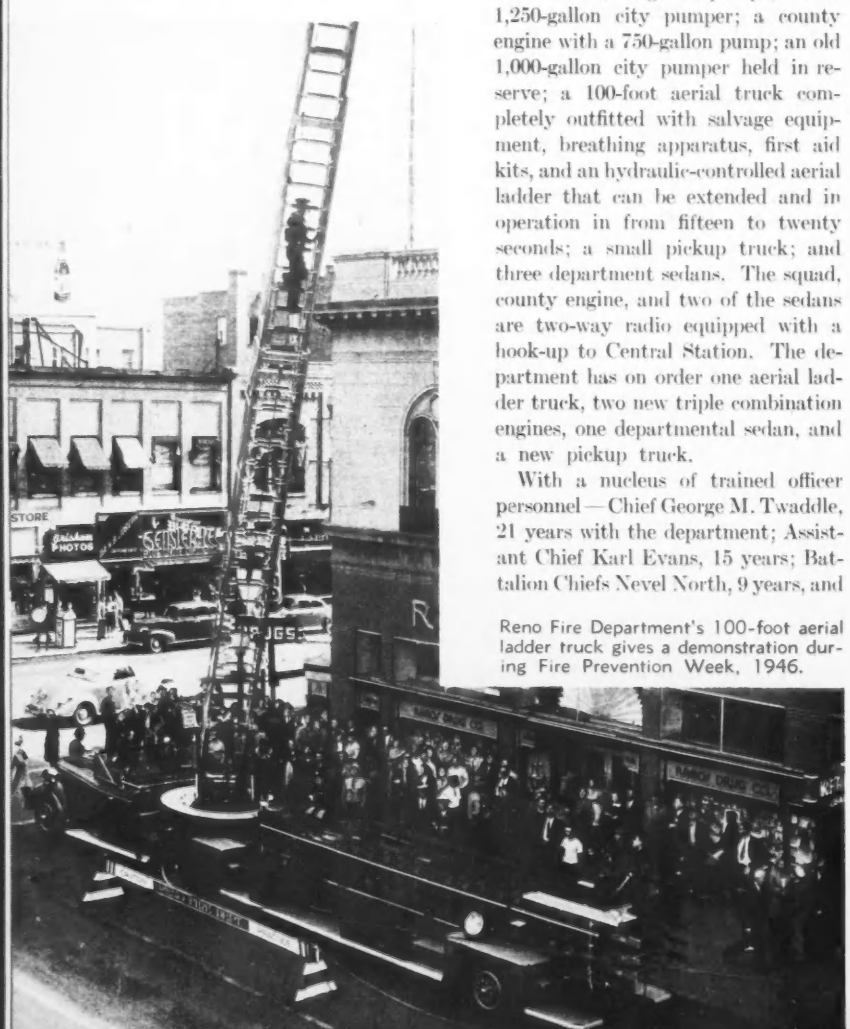
AT THE base of the Sierras, Reno, Nev., the "biggest little city in the world," nestles cozily in the center of a wide, green meadowland. But Reno has a problem!

Slow-moving freight trains wending their way east and west over tracks that bisect the business section and the old western-type buildings mingling with the modern-fronted palaces of entertainment for which the town is famous create a situation in fire protection that is unusual.

Citizens of Reno had this in mind when they built the fire department up from Reno Engine Company No. 1, organized November 10, 1875, to the present first class paid department.

The Reno Fire Department (NFPA member) is housed at present in three stations. On hand, fully equipped are three triple combination engines, the squad with a 1,250-gallon pump, and the two engines at the outside houses—both with 1,000-gallon pumps; a new 1,250-gallon city pumper; a county engine with a 750-gallon pump; an old 1,000-gallon city pumper held in reserve; a 100-foot aerial truck completely outfitted with salvage equipment, breathing apparatus, first aid kits, and an hydraulic-controlled aerial ladder that can be extended and in operation in from fifteen to twenty seconds; a small pickup truck; and three department sedans. The squad, county engine, and two of the sedans are two-way radio equipped with a hook-up to Central Station. The department has on order one aerial ladder truck, two new triple combination engines, one departmental sedan, and a new pickup truck.

With a nucleus of trained officer personnel — Chief George M. Twaddle, 21 years with the department; Assistant Chief Karl Evans, 15 years; Battalion Chiefs Nevel North, 9 years, and Harry Van Meeter, 8 years; and the 8 captains whose total service adds up to 83 years — the Reno Fire Department has been hiring mostly World War II veterans to fill vacancies. As Chief Twaddle puts it, "Men coming out of the Army, Navy, or Marines have already been trained in discipline. We take advantage of this service training to fit them into our picture and find these ex-servicemen in the majority of cases are adaptable to fire fighting, if properly schooled."



Reno Fire Department's 100-foot aerial ladder truck gives a demonstration during Fire Prevention Week, 1946.

All men in the department are receiving instruction and training at the Reno Fire College. Under the supervision of Chief Twaddle and Assistant Chief Evans, this training is conducted by the two battalion chiefs, who are also drillmasters for the department. Both battalion chiefs have had schooling at outside fire colleges.

Practical training consists of instruction in the use of all vehicles and equipment carried on them, hose drills, ladder and aerial drills, and life saving, including first aid, use of ropes and nets, use of breathing apparatus, and resuscitation and inhalation classes. A new drill tower is being constructed.

In addition to this practical work, the men are receiving instruction in location of streets, hydrants, and fire alarm boxes so that a run can be made in the shortest time.

Other courses are taken by the men and a progress or efficiency sheet is kept on each man. At the end of three years, if he passes all his subjects, the man is awarded a diploma.

Recruits in the department must pass a physical examination and mental test prepared by the Reno Civil Service Commission. They are then

assigned as hosemen on probation for at least six months, after which they are confirmed as permanent city employees by the city council when certified by the commission. All jobs on the department come under the competitive promotional set-up of the Reno Civil Service Commission.

The department works on the two-platoon system — with the men working twenty-four hours on and twenty-four hours off — one platoon relieving the other at 8 A.M. each day. Every seventh working day the men are entitled to three days off. The men are not on call when off duty except for a second alarm, but the chief officers are on call at all times, with the exception of their three or five days when their name is taken from the call sheet.

A new educational program is being initiated in all the Reno schools by the department to teach the children fire prevention and fire hazards. This program, known as the Reno Junior Fire Department, includes manuals and question and answer books furnished to the fifth and sixth grades, lectures by qualified firemen instructors once a week to the children, and badges issued to the members of the junior fire department from hoseman to chief. The badges and promotions must be earned.

Each member of the junior fire department carries printed forms with him or her and when he or she sees a fire hazard in town, a note is made on the form. The member of the junior fire department tells the occupant or owner of the property, politely asks them to correct the hazard, and then

Chief George M. Twaddle stands beside Reno's triple combination 1,250-gallon squad truck.

the person spoken to signs the printed form. This is turned in to the teacher, checked by the fire department's fire prevention bureau and credit given. The member of the junior fire department with the highest number of credits becomes chief for the next year. Even the kids in Reno are becoming fire conscious.

Reno does NOT gamble on fires!

A BRILLIANT, roving blade of red light that stabs through the darkness giving instant warning to pedestrians and other traffic . . . and gives better protection to your own vehicle! In the daytime, this powerful beam of light flashes a warning to all, signalling that your vehicle is approaching.

Federal's Propello-Ray Light operates silently, without gears or similar complicated parts. All the moving parts are enclosed in streamlined chrome weatherproof housing to guarantee dependable, reliable service.

And for added protection, the efficient Propello-Ray Light is incorporated into three of Federal's fast-selling Trafflking sirens.

Get detailed information and prices on the complete line of Federal sirens. Write for bulletins today.

Model 67
an all-purpose siren for heavy duty, characterized by its deep tone.

Model 78
a double tone coaster siren that has a full two minute roll.

Model C-6
Federal's most powerful coaster siren, supreme in sound output and coasting.

(The siren and light are on separate circuits so that either signal will operate independently).

FEDERAL ELECTRIC COMPANY, Inc.
8717 S. State St. SIREN HEADQUARTERS Chicago 19, Ill.

FIREMEN'S Rubber and Canvas CLOTHING FROM Midwestern

This Midwestern Combination Suit, made of Vanitex, the modern waterproof fabric, is sold separately or together. The "Mackinaw Coat" is a highly serviceable garment with flexible elastic inner sleeves; adjustable collar strap, detachable wool lining, Midwestern safety snaps, two outside pockets, 6" storm flap and many other good features.

Hundreds in use All over America

Midwestern Bunker Pants with detachable wool lining, safety snap on adjustable belt, wide protecting flap, are sturdily constructed with reinforced crotch for pole sliding. Write today.

FIREMEN'S BOOTS
Regular Firemen's Boots, 14 length, available now. We can also supply REGULAR Firemen's Boots, felt lined, reinforced instep. See your Midwestern Manufacturing Company dealer for prices or write the factory.

Mackinaw Coats are Manufactured by
MIDWESTERN MANUFACTURING CO.
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TRADE MARK

MEARLFOAM

The all-climate, dependable mechanical foam extinguisher » » » *It flows—covers—seals—extinguishes* » » » Highly effective on oil and gasoline fires—on Class A fires » » » Use with any kind of water—at any temperature—in all makes of equipment.

Write for descriptive bulletin

FIRE OUT... Stays OUT!

THE MEARL CORPORATION
153 Waverly Place, New York 14, N. Y.

Specify HALE

FIRE PUMPS HALE CONSHOHOCKEN PA

. . . on your next pumper and be sure of efficient, flexible and dependable performance.

Write today for latest information on Hale Fire Engine pumps . . . built in all standard capacities.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

National Fire Protection Association, International

Associate Membership

VOLUNTEER FIRE COMPANY SECTION ($10 annual dues) Eligible:

(1) all bona fide volunteer fire organizations in any community.

(2) all fire departments and companies in communities of less than 25,000 population.

(3) all industrial fire brigades.

Member volunteer fire companies receive ten copies of FIREMEN magazine each month, mailed to the homes of individual firemen. Beyond the ten, additional copies of FIREMEN cost $1 per year.

Volunteer Fire Company Section members, receive, at their headquarters, one copy of all publications sent to NFPA associate members.

ASSOCIATE MEMBERSHIP ($10 annual dues) Eligible: Individual fire department officers, firemen, and others interested in fire safety. NFPA associate members in the fire service receive: one copy of FIREMEN magazine monthly, the NFPA **Quarterly**, the monthly **News Letter**, technical standards, popular bulletins and posters.

All associate members have one vote in Association affairs.

New members of the Volunteer Fire Company Section are:

Ashland County Fire Protection District, San Leandro, Calif.

Barnegat City Fire Company No. 1, Barnegat City, N. J.

Branchville Volunteer Fire Co. and Rescue Squad, Inc., Branchville, Md.

San Andreas Volunteer Fire Dept., San Andreas, Calif.

Willing Hand Hose Co., Montoursville, Pa.

CANADA

Edmundston Fire Brigade, Edmundston, N. B.

North Battleford Fire Dept., North Battleford, Sask.

★ ★ ★

Insurance Rates

Continued from page 7

We have intentionally gone into considerable detail for the sole purpose of making clear two or three points in connection with town grading from the firemen's point of view.

First: That most of the items entering into the grading are beyond the scope of the fire department to help.

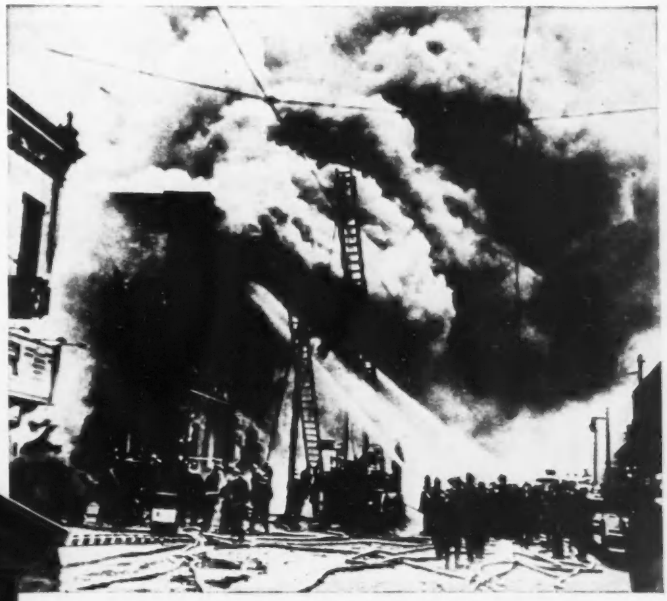
Second: That under some conditions, the fire department might be improved considerably and still not eliminate enough deficiency points to alter the classification.

Third: That the entire community, through its officials, is entirely responsible for the classification of the town. The community definitely is responsible for existing conditions. The engineers from the Underwriters simply come in and apply an engineering yardstick to conditions as they find them.

To be continued

DELAYED ALARMS

CAUSE FIRE DISASTERS



WHEN FIRE OCCURS—

PULL A FIRE ALARM BOX IMMEDIATELY!

"It is generally recognized that there is no other thoroughly satisactory means of sending and receiving fire alarms than an approved fire alarm telegraph system. Telephones should not be relied upon to replace needed boxes nor to supplement any inadequacy in number or location of boxes."

—National Fire Protection Association

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- Reduces hose stretch
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Dept. 20-26 Dayton 1, Ohio

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Nozzle Tips for Heavy Streams

Continued from Page 13

1,000-gallon pumper should be delivered through four lines not much over 200 feet long or through three lines of 100 to 150 feet. Unless such a layout is possible it will be necessary to use two 1,000-gallon pumpers capable of giving one-half their rated capacity at 200 pounds and each supplying two lines to the 2-inch tip.

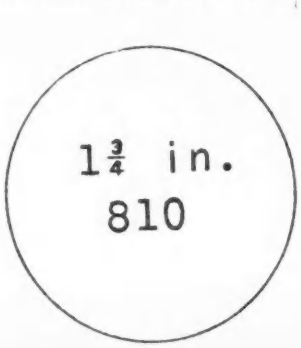
IN GENERAL, the best advice to the average fire department having a limited number of pumpers available for heavy streams is: remove the 2-inch tip from the apparatus so you will never be tempted to use it at a fire. It is true that a modern 1,000-gallon centrifugal pump at a strong hydrant may be able to supply the 2-inch tip at fair pressure through short lines, but the stream may have a shorter range than a 1¾-inch tip at 80 pounds. There is danger that pumping apparatus may fail through overload unless the operator realizes the problem of supplying this big tip. The 2-inch tip may be used in large cities where high pressure mains and 3-inch hose are available, but, in general, heavy streams that can be supplied by two or three short lines from a single pumper are the quickest and simplest to operate.

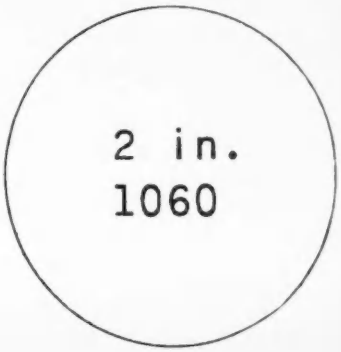
One word of caution is needed with regard to heavy streams. All too many fire officers have been deceived by demonstrations that did not duplicate fire ground conditions. The department buys a new turret nozzle or monitor pipe. The chief picks the most powerful hydrant in town, connects up the best pumper, runs two or three very short lines (no need of handling unnecessary hose), puts on the largest nozzle tip, sends a man out across the field to see how far the spray will carry, and tells the pumper operator that he has no stock in the machine and so "give her the works." There is likely to be little patience with anyone suggesting the possibility of taking a pitot tube reading of the nozzle pressure. "Can't the fool see that we have a beautiful stream?"

Such demonstrations have considerable usefulness in making all hands familiar with the equipment but the nearer they duplicate actual fire ground conditions, the more practical they become. In the first place, we are going to use that heavy stream nozzle at a big fire where perhaps three to a dozen other pumpers will be drawing on the same water supply. The fire is very likely to be in a location where the operator of the pump supplying the heavy stream will consider himself lucky if he can get 600 to 700 gallons from the hydrant and have a residual pressure of 10 to 15 pounds. Very likely the first arriving companies went to work with hand lines from the nearest hydrants, and if the pumper supplying the heavy stream is within 400 to 500 feet, the operator gives a little prayer of thanksgiving.

There is always the danger that some officer will spot an empty gate on the pump supplying the heavy stream and order another line run, despite the fact that neither the heavy stream nor the hand line will get an effective supply. To guard against this, the operator may connect a spare length of hose to his idle pumper outlet and throw the butt under the apparatus.

The company officer and the pump operator must know how much water their individual pump can turn out at 120, 150, 180, or 200 pounds. The officer must order the correct nozzle tip employed and the proper number of lines and pressure to supply the tip. Where this is done, there is no reason why any department having pumping capacity available and reasonably good hydrants cannot have effective heavy streams.

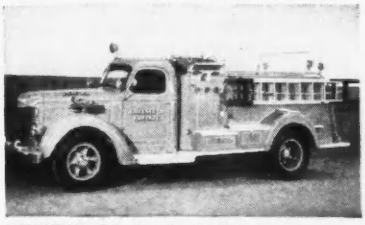




AIRPLANE CRASH FIRE

TRI-CITIES AIRPORT, ENDICOTT, N. Y. *Standard FMC Fog Fire Fighter for airport serving Endicott, Binghamton and Johnson City, N. Y.*

SPRINGFIELD, PA. *Standard FMC Fog Fire Fighter delivered to Springfield Fire Dept.*



HALLSTEAD, PA. *Standard FMC Fog Fire Fighter delivered to Hallstead Fire Dept.*

It takes fast action to put out the fire in time to save lives. Fire apparatus must be positive and quick, so that advance can be made right up to the point of rescue without danger to the fireman.

Wartime experience on airplane crash fires proved this kind of quick action is possible with the FMC High-Pressure Fog Fire Fighter. The wartime records of hundreds of FMC units show many lives were saved.

Beyond comparison for saving planes and also invaluable for all other types of airport fires, here's what the FMC Unit provides:

1. **Two high-pressure hose lines, discharging 30 gallons per minute each.**
2. **Gun pressure—650 lbs.**
3. **Pump pressure—850 lbs.**

In airplane fires, FMC Units use high-pressure water fog only, at high velocity, to cut right through to the rescue point. Hundreds of these same units are now serving cities, towns and villages for regular fire fighting. Investigate FMC for *your* department.

UNDERWRITERS' LABORATORIES APPROVED

LAUREL, MD. *FMC Fog Fire Fighter recently delivered to Laurel Volunteer Fire Department.*

MIDDLEBURG, VA. *FMC Fog Fire Fighter delivered to Middleburg Volunteer Fire Dept.*

BALTIMORE MUNICIPAL AIRPORT, MD. *Standard FMC Fog Fire Fighter delivered to Baltimore Municipal Airport. Carries its own water supply and complete fire fighting equipment. Provides two guns of 30 gallons each at 650 lbs. nozzle pressure, with pump pressure at 850 lbs.*

FMC *Original* HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

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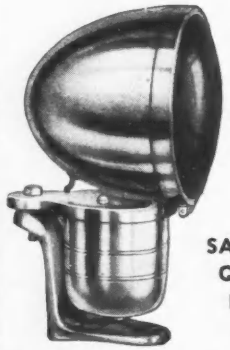
COMBINATION FLASHING AND OSCILLATING RED BEAM 1000 FT. AHEAD



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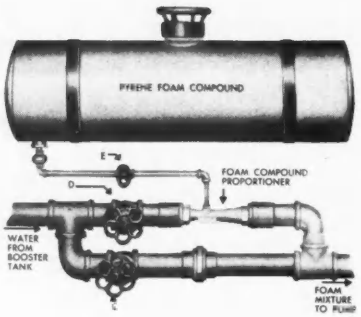
BOSTON 45, MASS.

MANUFACTURERS' ANNOUNCEMENTS

Air Foam System for Fire Trucks

Volunteer fire departments that have motor fire apparatus with a booster water tank can now equip them with an air foam system that is simple, compact, and of a large foam capacity, according to the Pyrene Manufacturing Company, Newark, N. J.

By adding a tank for Pyrene foam compound, a proportioner, connecting piping and a PP-25-S Pyrene foam playpipe, thousands of gallons of foam can be produced for extra-hazardous flammable liquid fires. The system is put into



operation by simply opening two valves and attaching playpipe to hose. A pumper with a 500-gallon water tank and 25-gallon foam compound tank will produce approximately 8,750 gallons of foam using 40 gpm of water, 2 gpm of foam compound and operating for 12½ minutes. Operation can continue indefinitely if the supplies of water and foam compound can be replenished.

The installation, as illustrated above, can be made by any fire department. Piping A is connected to booster water tank; piping B to suction side of pump. To operate the foam system, close valve C and open valves D and E. To discharge plain water, close valves D and E and open valve C. The simplicity of getting into action and speed of foam generation, the economy of space and of investment, and the large foam production are the factors which the manufacturer claims of greatest interest to fire departments.

* * *

New Air Foam Nozzle

American-LaFrance-Foamite Corporation of Elmira, N. Y., calls attention to its "Foamite Airfoam Generating Nozzle" which the manufacturer states is fast in action, easy to work, light in weight, and efficient in service. The nozzle mechanically creates "Airfoam" by means of a scientific mixing of water, air, and "Foamite Airfoam Liquid" within the nozzle, discharging the combined ingredients as foam through the nozzle tip. The nozzle is only 2½ inches in diameter at its widest part. The manufacturers will furnish free literature on request.

* * *

Extinguisher "Data Guide" Offered by Randolph Laboratories

Randolph Laboratories of 8 East Kinzie St., Chicago 11, Ill., has just produced a very clever and useful device for determining readily the characteristics of all common types of first aid fire appliances. The "Data Guide" as it is called embodies some of the principles of a slide rule. It is made of rigid card construction in convenient pocket size. By operating the slide it is possible to show instantly for each type of fire extinguisher details of such characteristics as suitability, maintenance, and performance. The reverse side of the guide offers suggestions on the location of extinguishers in relation to hazards, and the area protected by each unit. A single copy is offered to fire department officers and inspectors without charge by Randolph Laboratories.

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For all fire department service or commercial use.

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